HIGH POWER, WIDE BANDWIDTH OPERATIONAL AMPLIFIER

ABSTRACT

A high bandwidth operational amplifier architecture has three control loops, which are combined via a voltage-follower-configured field effect transistor. The first control loop is an instantaneous main amplification path and employs positive feedback-based Vgs correction of the output transistor. The second control loop has a bandwidth considerably lower than the first loop and employs negative feedback to correct for long term drift errors. The third control loop, utilizing negative feedback, is a fast path having a bandwidth that overlaps the bandwidth of the first control loop, and corrects for overshoot and undershoot in the main amplification path.